

ABSTRACT

A golf ball having at least a core and a cover, wherein at least a portion of the ball is formed from a material resulting from the isomerization of an amount of polybutadiene in solution to create a resulting polybutadiene having an increased content of *trans*-polybutadiene, is disclosed. Isomerization can be accomplished by mixing a photo-sensitizer into the polybutadiene solution and exposing the resulting mixture to a radiation source such as ultraviolet radiation. Isomerization can also be accomplished thermally by mixing nitrogen dioxide into a sufficiently heated solution of polybutadiene and maintaining the mixture at an elevated temperature for a sufficient period of time to increase the *trans*-polybutadiene content of the polymer. The resulting polybutadiene is recovered, mixed with other additives as desired and formed into one or more portions of a golf ball.